

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE
PROPERTY OR PRIVILEGE IS CLAIMED, ARE DEFINED AS FOLLOWS:

1. A method for selectively enabling, during a search operation, at least one of a plurality of matchline segments within a row of a content addressable memory (CAM) array, each matchline segment having a plurality of CAM cells coupled thereto, the method comprising the steps of:
- (a) setting the matchline segments to a first search result condition;
 - (b) evaluating a first matchline segment for a second search result condition; and
 - (c) selectively enabling a second match line segment, in response to the second search result condition in the first matchline segment, so that said second search result condition can be detected thereat.
2. A method of claim 1, including propagating the second search result condition conditions in the first matchline segment along the row to indicate a search result condition for the row.
3. A method of claim 1, said first search result condition being a miss condition and said second search result condition being a match condition.
4. A method of claim 1, said step of setting includes precharging all said matchline segments to a miss condition.
5. A method of claim 1, wherein evaluating the first matchline segment comprises enabling the matchline segment and sensing a the logic state of the first match line segment.
6. The method of claim 4, said step of enabling includes allowing the match line segment to discharge to a match condition.
7. The method of claim 1, wherein the second match line segment is not prevented from

discharging toward ground potential only when there is a match condition in the first row segment.

8. A content addressable memory (CAM) including a plurality of rows, each of the rows comprising:

- (a) a plurality of matchline segments having a plurality of CAM cells coupled thereto;
- (b) a circuit for precharging the matchline segments to a first search result condition;

each said segment including:

- (i) a sense circuit for detecting a second result condition therein; and
- (ii) a circuit for enabling a discharge path in a subsequent segment, to detect said second search result condition therein.

9. A method of searching a content addressable memory (CAM) having a plurality of rows of CAM cells, each row being coupled to an associated match line, each match line having a plurality of match line segments, the method comprising:

- (a) precharging the plurality of match line segments to a first condition;
- (b) searching a first segment in each match line; and
- (c) selectively searching a second segment only if the search of the first segment results in a condition other than the first condition.

10. The method of searching a CAM as claimed in claim 9 further comprising the additional step of selectively searching any segment subsequent to the second segment only if the search of a previous segment results in a condition other than the first condition.

11. A method of searching a content addressable memory (CAM) having a plurality of rows of CAM cells, each row being coupled to an associated match line, each match line having a plurality of match line segments, the method comprising:

- (a) precharging the plurality of match line segments to a "miss" condition;

- (b) searching a first match line segment; and
- (c) selectively searching a second match line segment only if a "hit" condition is detected in the first match line segment.

12. A method as claimed in claim 11 wherein the "hit" condition is propagated through all match line segments indicating a "hit" condition until a "miss" condition is detected causing that segment and any subsequent segments to be disabled.

13. A method of performing a pipelined search operation in a content addressable memory (CAM) having segmented match lines comprising the following steps:

- (a) precharging all match line segments to a "miss" condition;
- (b) searching a match line segment during a first clock cycle;
- (c) searching a subsequent match line segment during a subsequent clock cycle only in case a "hit" condition is detected in a previous match line segment;

14. A method as claimed in claim 13 further comprising the step of disabling a subsequent match line segment in case a "miss" condition is detected in a previous match line segment.

15. A method as claimed in claim 13 further including the step of selectively disabling search line drivers associated with subsequent match line segments once a "miss" condition has been detected in a previous match line segment.

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